

Hawaii Fuels Study  
**Policy Analysis of Gasoline Price Caps and  
Alternatives for Lower Gasoline Prices in Hawaii**

Interim Presentation to Legislature  
January 28, 2003

## Agenda

- Preliminary Conclusions
- Scope & Status Update
- Stakeholder Meetings
- Supply/Demand Issues
- Hawaii Fuels Infrastructure
- Refining Costs & Margins
- Market Mechanisms
- Impact of Price Caps
- Next Steps

## Preliminary Conclusions

### Hawaii fuels markets - high cost, function differently than other markets

- Refiners
  - Small scale, low complexity refineries running mostly expensive light sweet crude oil to make jet fuel and fuel oil
  - Branded gasoline retail is a small portion of total fuels but is used by refiners to compensate for low margins on other products
  - Local refineries cannot match the low costs of Pacific Rim refiners
  - The Aloha/USRP import terminal brought the wholesale market into import parity
- Gasoline Retail
  - High cost of land is a significant factor in retail cost
  - Inter-island distribution adds cost over mainland markets
  - Low average volume per station increases cost per gallon
  - Market currently sees major changes, similar to those that caused closure of high cost retail in the continental US over the past decade

## Preliminary Conclusions (Continued)

### Price Caps are unlikely to be effective

- Effect of current formula
  - Does not fully recognize differences in cost structure of retailers and wholesalers
  - Link to California will bring higher prices, volatility and seasonality
  - Will eliminate some high cost services in remote areas
  - May cause widening differences between grades
- General concerns
  - Forces at work are far more complex than caps can address
  - Caps reduce rather than promote competition
  - Earlier US and Canadian initiatives were not successful
  - Caps do not foster the cooperative environment between industry and government needed to overcome collective challenges

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## Scope of the Study



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- Gather, review, analyze and evaluate information, including:
  - Publicly available information, studies, and reports
  - Unsealed documents from the AG's investigation of the petroleum industry
  - Oil Price Information Service or other appropriate benchmarks
  - Various price sensitivity scenarios
- Review options available to the Legislature to reduce wholesale and retail gasoline prices, including:
  - Proposals to impose maximum price caps
  - Stricter anti-trust laws
  - Lowering barriers to entry
  - Attracting other competitors to the market and increasing competition among current players

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## Status – 11 weeks



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- RFP issued late August, contract signed November 1, first stakeholder meeting November 18
- Conducted over 50 meetings and conference calls with stakeholders
  - Industry participants: refiners, jobbers, marketers, dealers, logistic service providers
  - Government: Senate & House, AG office, legislative staff
  - Experts: U of Hawaii, consultants hired during lawsuit
- Started quantitative analysis
  - Supply chain economics
  - Effect of Price Caps
- Prepared outline and first draft report
- Prepared Interim Presentation

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## Stakeholder Meetings – Government Officials

- Act 77 was reaction to settlement of the anti-trust lawsuit
- There is a general realization that, in its current form, the Act unlikely to be effective
- Market is still broken, strong sentiment that “Something Must be Done”
- Suggested alternatives include Public Terminal, Public Oil Company, Public Oversight, and Stimulating Competition
- Effects on Neighbor Islands a concern

## Key Issues from Stakeholders

	Suppliers	Jobbers	Dealers	Others*
Act 77 politically motivated	All	All	All	All
Market not broken, retail competitive	All	All	All	All
Price caps won't work	All	All	All	All
Negative impact on investments	All	All	All	All
Divorcement was mistake	All	All	Most	Most
Poor relations government/industry	All	All	All	Most
Chevron to blame	Most	All	All	All
Chevron leads gasoline market	Most	All	All	All
Price information not reliable	All	All	All	Most
Barriers to entry Neighbor Islands	Some	Most	Few	Most
Refining not very profitable	All	Some	Some	Some
Permitting issues	Some	Some	Few	Some

\* Academics, government staff, logistic service providers, traders, marketing services

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- **Supply/Demand Issues**
  - Hawaii Refineries
  - US West Coast Sources
  - Pacific Rim Sources
- Hawaii Fuels Infrastructure
- Refining Costs & Margins
- Market Mechanisms
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# Hawaii Refineries



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## Current Capacities

Units, bbl/day	Chevron	Tesoro	Total
Atmospheric Distillation	57,000	95,000	152,000
Vacuum Distillation	31,300	43,000	74,300
Catalytic Cracking	22,000		22,000
Cat Hydrotreating	3,500	12,000	15,500
Cat Hydrocracking		18,000	18,000
C4 Isomerizer	3,200		3,200
Alkylation	5,000		5,000
Catalytic Reforming		13,000	13,000
Thermal & Visbreaking		13,000	13,000
Asphalt & Road Oil	1,500	1,000	16,000

Products, bbl/day	Chevron	Tesoro	Total
Propane	2,000	3,000	5,000
Gasoline	15,000	14,000	29,000
Diesel	7,000	22,000	29,000
Jet Fuel	11,000	29,000	40,000
Naphtha	6,000	7,000	13,000
Fuel Oil	16,000	24,000	40,000
Asphalt	>1,000	>1,000	>2,000
	58,000	100,000	

- History
  - Chevron started in 1962 with 33,000 BPD capacity
  - Tesoro started as PRI/HIRI in 1972 with state assistance at 30,000 bpd
- Unique product/crude slate
  - Primary products are fuel oil, jet
  - Light, sweet crude oil feedstock
- Significant economic factor
  - Direct employment for 850 people, many more jobs indirect
  - Significant local tax payers
  - Strategic economic and military considerations
- Currently, crude runs are
  - Chevron 48 - 50 TBD
  - Tesoro 85 - 87 TBD



# Hawaii Supply Demand Balance



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## Approximate Current Balance, BPD

	Hawaii Capacity	Hawaii Demand	Local Supply	Imports (Exports)
Propane	5,000	1,500	1,500	0
Gasoline	27,000	26,000	26,000	0
Naphtha	13,000	6,000	13,000	(7,000)
Diesel	29,000	26,000	26,000	0
Jet Fuel	40,000	41,000	32,000	9,000
Fuel Oil	34,000	33,000	30,000	3,000
Asphalt	2,000	1,500	1,500	0

**Naphtha is exported to Japan**

**Jet fuel is imported from Pacific Rim refiners**

**Fuel oil is imported from Indonesia**

**Small volumes are exchanged with the mainland US**

- Gasoline
  - Supply and demand are balanced
  - Demand is stagnant
- Fuel oil, diesel
  - Some imports come in for commercial reasons or for quality
- Jet Fuel
  - Production limited by ability of refiners to sell co-products
  - Imports serve to achieve international market parity

**Demand growth is unlikely to cause a shift in Hawaii's supply pattern**





# US West Coast Supply and Demand



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		Gasoline	Diesel	Jet	Resid
AK	Production	19	22	22	2
	Demand	19	22	26	2
	Balance	0	0	-4	0
WA	Production	270	137	116	71
	Demand	182	59	68	25
	Balance	+88	+78	+48	46
OR	Production	0	0	0	0
	Demand	98	44	17	5
	Balance	-98	-44	-17	-5
CA	Production	1,049	291	240	58
	Demand	996	231	282	112
	Balance	+53	+60	-42	-54
AZ	Production	0	0	0	0
	Demand	142	52	29	0
	Balance	-142	-52	-29	0
NV	Production	0	0	0	0
	Demand	55	24	25	0
	Balance	-55	-24	-25	0
Production		1,341	450	378	131
Demand		1,492	432	447	144
Balance		-150	18	-69	-13

- US West Coast is a significant net importer across the barrel
- Situation will worsen with CARB Phase III implementation in CA
- Incremental shortfall likely to be as high as 100 TBD
- Additional imports will be high value blending components from remote sources
- Demand in CA, AZ, NV continues to grow at 2 – 3% per year
- Capacity additions highly unlikely
- Jones Act adds to cost of US supplies

**US West Coast is not useful as reference for Hawaii**

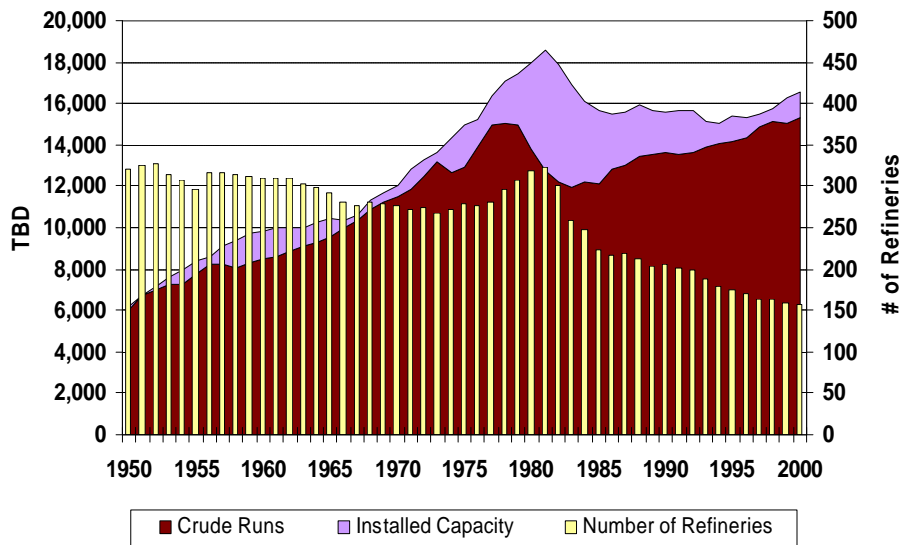


# US Overall Supply Demand Balance



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**US Refining Capacity & Utilization  
1950 - 2000**



- Historically, refining is a low margin commodity industry
- The only time when refiners could afford to build overcapacity was in 1976 – 1981, when the industry was regulated
- Since 1981, rationalization has resulted in closure of small, inefficient refineries
- If located in continental US, Hawaii refineries would have been shut down or upgraded to full conversion
- Currently, the industry is once again at capacity
- Permitting restraints and community activism make new additions unlikely

**US as a whole is becoming increasingly short in refined products**

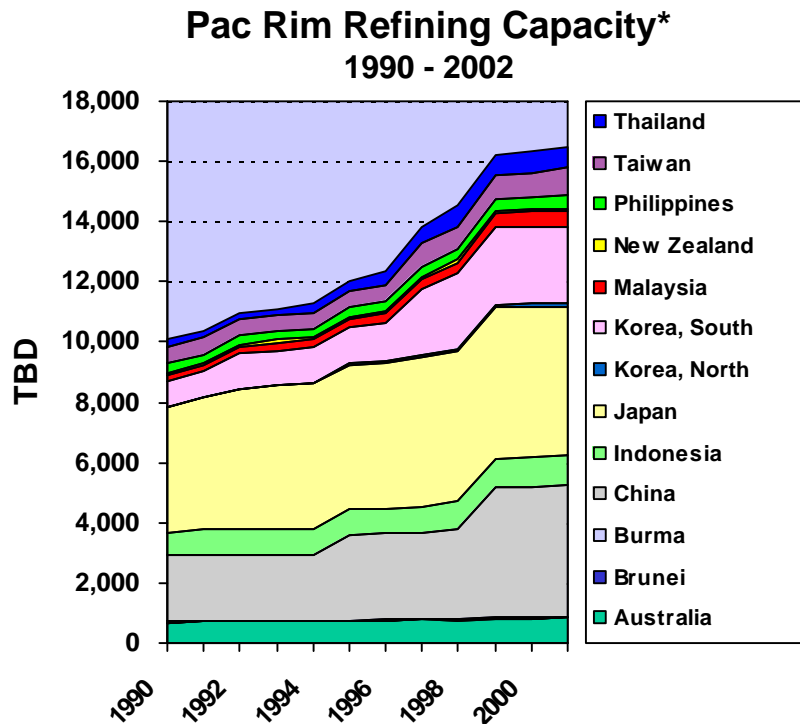
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# Pacific Rim Fuel Markets



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\* Source of data: Oil & Gas Journal

- Singapore, South Korea and Taiwan have aggressively added refining capacity
- The additions include new world scale refineries in the 500 – 800 TBD capacity range
- Pac Rim demand is primarily for distillates, co-produced gasoline is exported out of the region
- Singapore has emerged as a global fuels trading hub

**Pac Rim should be Hawaii's preferred framework of reference for fuels**

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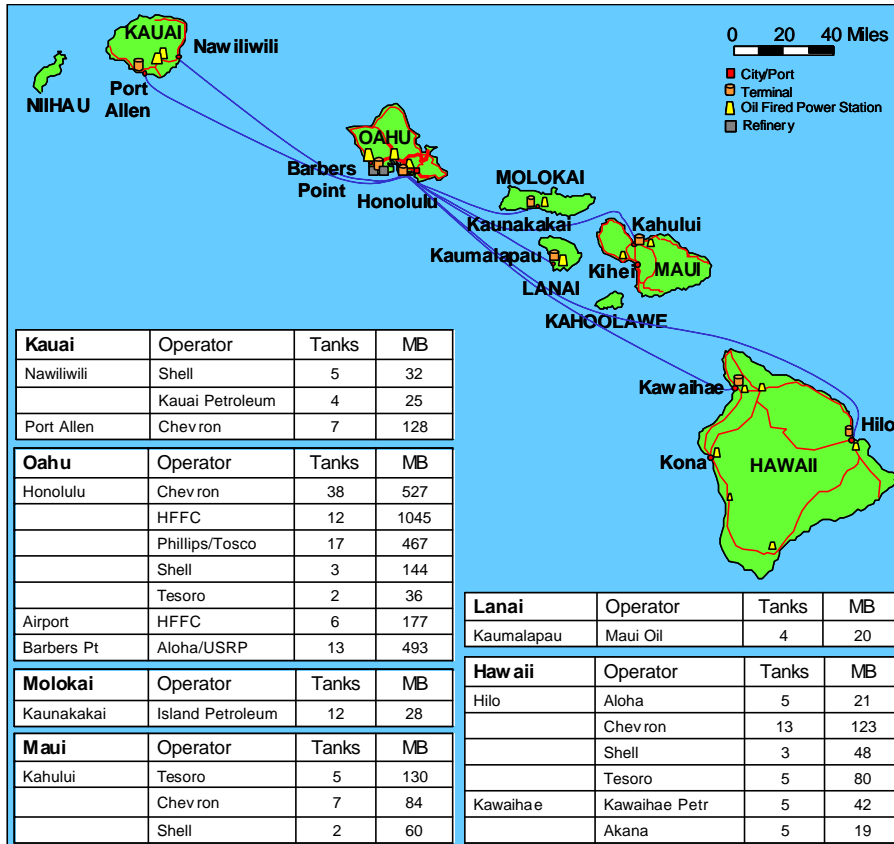
- Preliminary Conclusions
- Scope & Status
- Stakeholder Meetings
- Supply/Demand Issues
- **Hawaii Fuels Infrastructure**
  - Oahu
  - Neighbor Islands
- Refining Costs & Margins
- Market Mechanisms
- Impact of Price Caps
- Next Steps



# Hawaii Fuel Infrastructure\*



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- Oahu is refining and import center
- Neighbor islands are served by barge out of Honolulu and Barbers Point
- Terminal ownership in the islands determines market participation
- Internal distribution costs\* are high
  - Oahu trucking 2.5 cpg
  - Barging 5 cpg
  - Island terminals 2 – 3 cpg
- Infrastructure cost high because of small scale

\* Based on preliminary data from public and industry sources

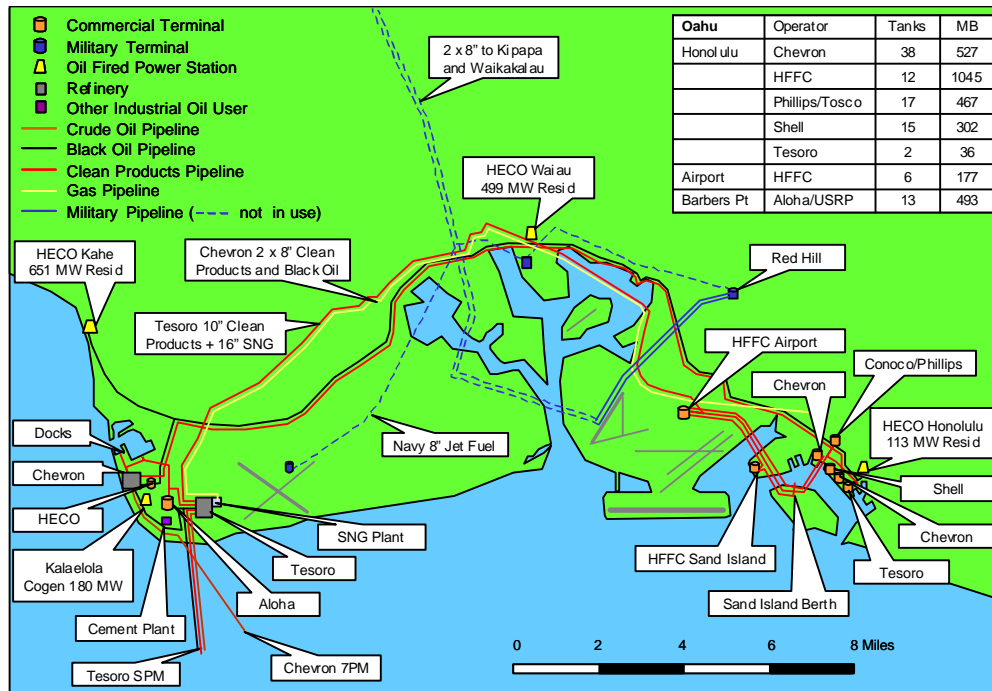
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# Oahu Petroleum Infrastructure\*



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## ➤ Crude Oil

- Offshore moorings restricted to 150,000 ton DWT, cannot receive a fully laden VLCC
- Inventories on average 7 days, with 20 days on the water

## ➤ Black Oil

- Pipelines to 3 power plants
- Imports only through refiners

## ➤ Products

- Aloha/USRP terminal offers independent import capability
- Ample pipeline capacity
- Storage in Honolulu reduced
- Some military systems are no longer in use

\* Based on preliminary data from public and industry sources



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- Preliminary Conclusions
- Scope & Status
- Stakeholder Meetings
- Supply/Demand Issues
- Hawaii Fuels Infrastructure
- Refining Costs & Margins
  - Crude Oil
  - Operating Cost
  - Prices & Netbacks
  - Profitability
- Market Mechanisms
- Impact of Price Caps
- Next Steps

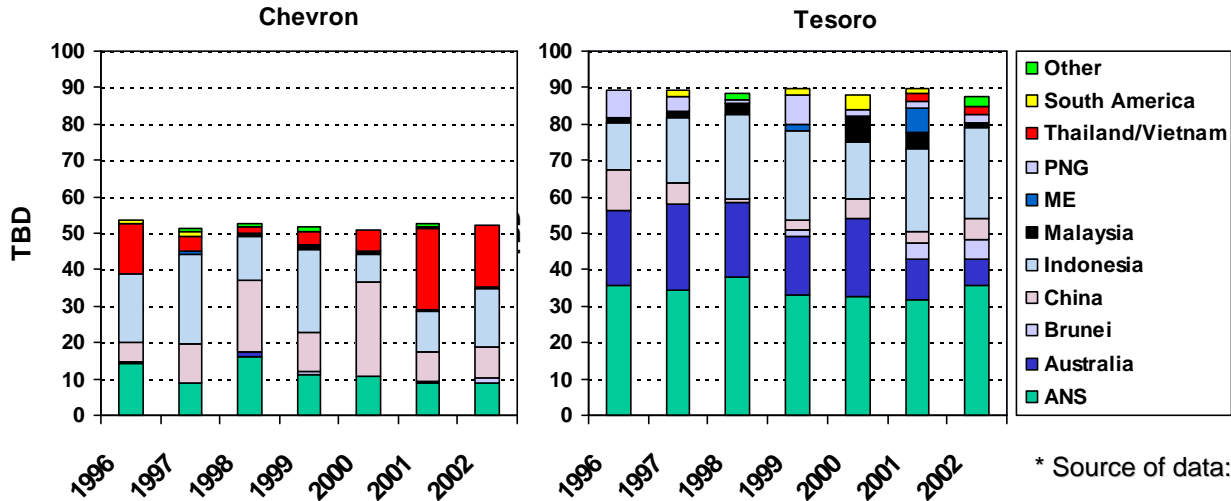


# Hawaii Crude Oil Consumption



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Hawaii Crude Oil Receipts, 1996 - 2002\*



- Alaska North Slope (ANS) still constitutes 30% of supplies, but ANS production is declining 8% per year
- Hawaii refineries use sweet, light crudes to maintain sulfur spec and distillation range for products in absence of heavy residue upgrading capabilities



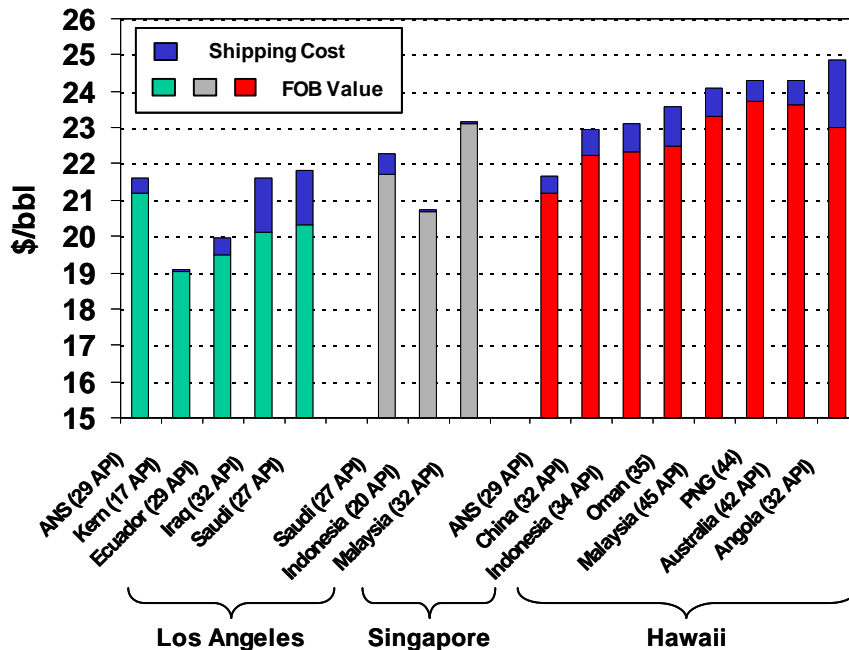


# Crude Oil Costs



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**2002 Delivered Crude Oil Cost\***  
Los Angeles, Singapore and Hawaii



\* Source of data: Petroleum Intelligence Weekly.

- Hawaii refiners pay a premium
  - \$3/bbl more than LA refiners
  - \$2/bbl more than Pac Rim refiners
  - Available data track US landed cost of API 30 – 35 Crude Oil + \$1.50/bbl
- Yield differences aggravate crude cost disadvantage for Hawaii refiners
- Some of the crude oil premium is recovered in lower refining cost
- Hawaii refiners plan to buy even better quality crudes to meet 2005 low sulfur requirements
- Light, sweet crudes become increasingly rare and premiums are expected to increase

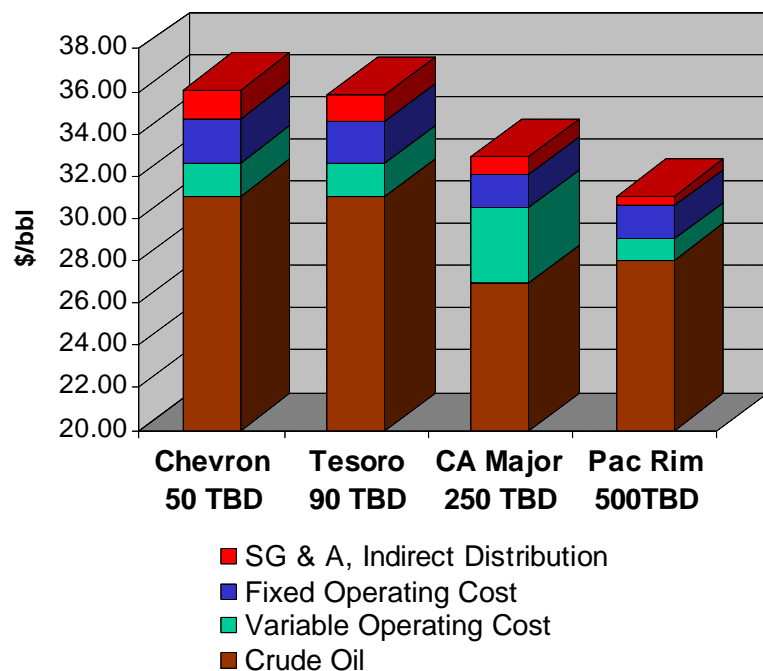


# Total Operating Costs



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**Estimated Refining Cost\***  
\$28/bbl Nominal Crude Price



\*Stillwater estimates based on publicly available information

## ➤ Overheads

- Includes field sales cost, corporate charges, and marketing cost such as credit card, and lease or capital cost not charged to dealers
- Includes cost of main distribution infrastructure, i.e., terminals & pipelines

## ➤ Fixed Costs

- Labor costs assume average payroll + burden of \$80k in Hawaii and CA, \$40k in Pac Rim
- Maintenance includes annualized cost of periodic turnarounds
- Includes depreciation, fees & taxes
- Excludes capital recovery and debt service

## ➤ Variable Costs

- Hawaii per bbl fuel cost are higher because Hawaii refiners use fuel oil rather than natural gas
- High CA cost caused by purchases of MTBE, ethanol, other blendstocks, which is partially offset by lower crude oil usage

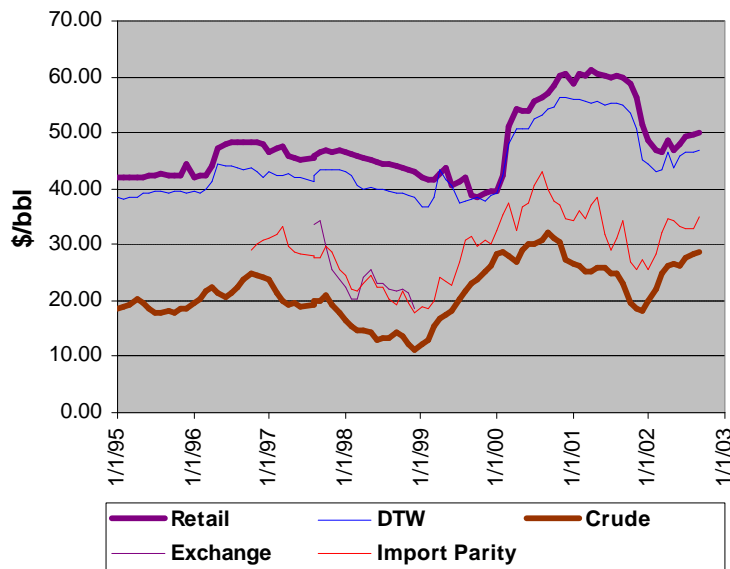


# Hawaii Gasoline Price Structure



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**Regular Gasoline Prices vs. Crude\***  
Hawaii ex-Tax Retail and DTW



cpg	1997	1998	1999	2000	2001
Midgrade	+6.1	+6.3	+7.8	+5.4	+6.1
Premium	+16.2	+16.0	+15.9	+12.4	+19.4

\* Source of data: EIA Monthly Petroleum Marketing Reports

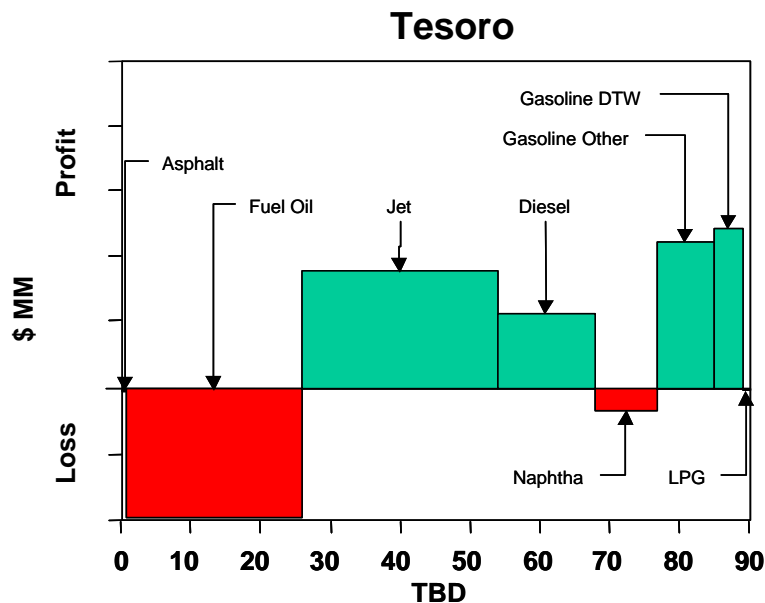
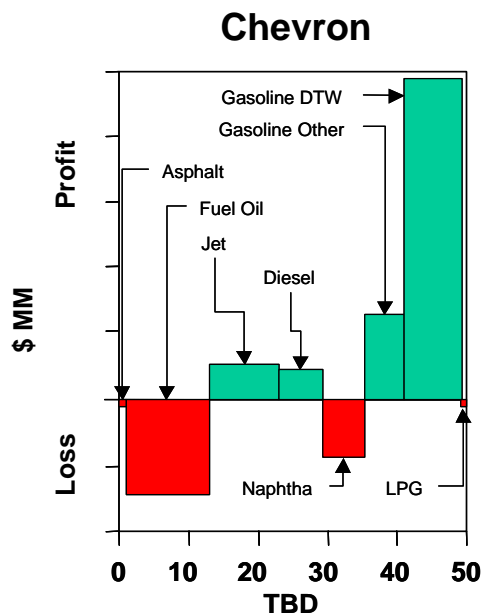
- Average delta of DTW gasoline over crude over past 5 years is \$23/bbl (55 cpg), vs. \$8/bbl (19 cpg) for US
- Midgrade and Premium represent 10% and 25% of sales (US: 7%, 13%)
- Refiners sell a large portion of their gasoline to co-marketers at significantly lower prices
  - Chevron 6000 bpd
  - Tesoro 9000 bpd
- Co-marketer pricing believed to be near import parity



# Hawaii Refiners – Estimated Profitability by Product\*



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- Gasoline, diesel and jet fuel sales have to compensate for losses in other products
- Jet fuel is global market where buyers control logistics and have purchasing power
- Diesel in Hawaii is primarily used for industrial, agricultural and power generation
- Gasoline is where refiners realize margins to recover capital investment

\* Based on EIA Price and Volume Data

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# Preliminary Findings on Margins & Prices



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- Hawaii refineries are high cost producers – high crude cost, small scale, high general costs
- Main products, jet fuel and fuel oil, are sold at international market parity
  - Fuel oil is sold at a loss by refineries worldwide (priced below crude) because supply exceeds demand and excess has to be processed at a significant cost in specialized units
  - Jet Fuel is commodity fuel with prices set by large, efficient export refineries
- Given their market power, Hawaii refiners are able to charge gasoline consumers sufficiently high prices to compensate for fuel oil, naphtha losses
- High gasoline prices would attract other participants if it weren't for barriers and small scale of market
- If gasoline prices come down to import parity, local refineries in current form would lose money



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- Market Mechanisms
  - Island Effect
  - Retail Cost Structure
  - Jet & Fuel Oil
- Impact of Price Caps
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## General Aspects of Isolated Markets



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- High prices can only exist in isolation of world markets if barriers prevent normal trading arbitrage
  - Duties and tariff barriers: Japan, Korea in the past, Panama recently
  - Physical barriers: lack of import infrastructure
  - Quality barriers: California's unique gasoline specifications
  - Commercial barriers: CA Unocal patent, refiner control of terminals
- Opening up island markets lowers prices for consumers, but often causes severe cutbacks in local industry
  - Panama: closure of local 50 TBD Texaco (now Chevron) refinery
  - Australia, Japan, Korea: local refiners had to adjust

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## Hawaii Barriers to Entry



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### Gasoline

- Overall local supply and demand are in balance, making terminals expensive to operate for small volumes
- Import infrastructure exist, but is used as leverage by market participants to exercise market power rather than flood the market with cheap imports
- Foreign suppliers have no access to retail market
- Inter-Island distribution has many physical barriers and small scale, limiting access to local markets

### Fuel Oil

- Utilities are knowledgeable buyers with concentrated purchasing power
- Import infrastructure exist, and is used as leverage by purchasers to obtain import parity pricing at small premiums
- Foreign suppliers bid on supply tenders, and are used for leverage with local suppliers
- Imports amount to 9% of Hawaii volumes
- Pricing is close to world markets

### Jet Fuel

- Purchasers have global reach
- Import infrastructure is owned by the purchasers, and is used to bring in volumes on a regular basis
- Export suppliers bid on supply tenders, and are awarded contracts
- Small premium still exists to reflect supply reliability preference for local refiners

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## Role of Import Facilities



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- Marine Terminals in independent hands provide wholesale-level competition
  - Costco in Hawaii made possible by Aloha/USRP terminal (Aloha supplies Costco, Aloha was able to leverage its import capability into lower cost local supply agreements)
  - Import capability enables Non-Island refiners to negotiate Singapore-related prices (prior agreements were West Coast parity exchanges)
  - Import capability reflected in military and commercial prices
- Other markets share the same experience
  - Australia until 1990 (Japan, Korea, UK earlier)
  - Los Angeles Basin still restricted today
- Role of Hawaii import facility is limited
  - Captive retail still prevents foreign supplier from flooding the market

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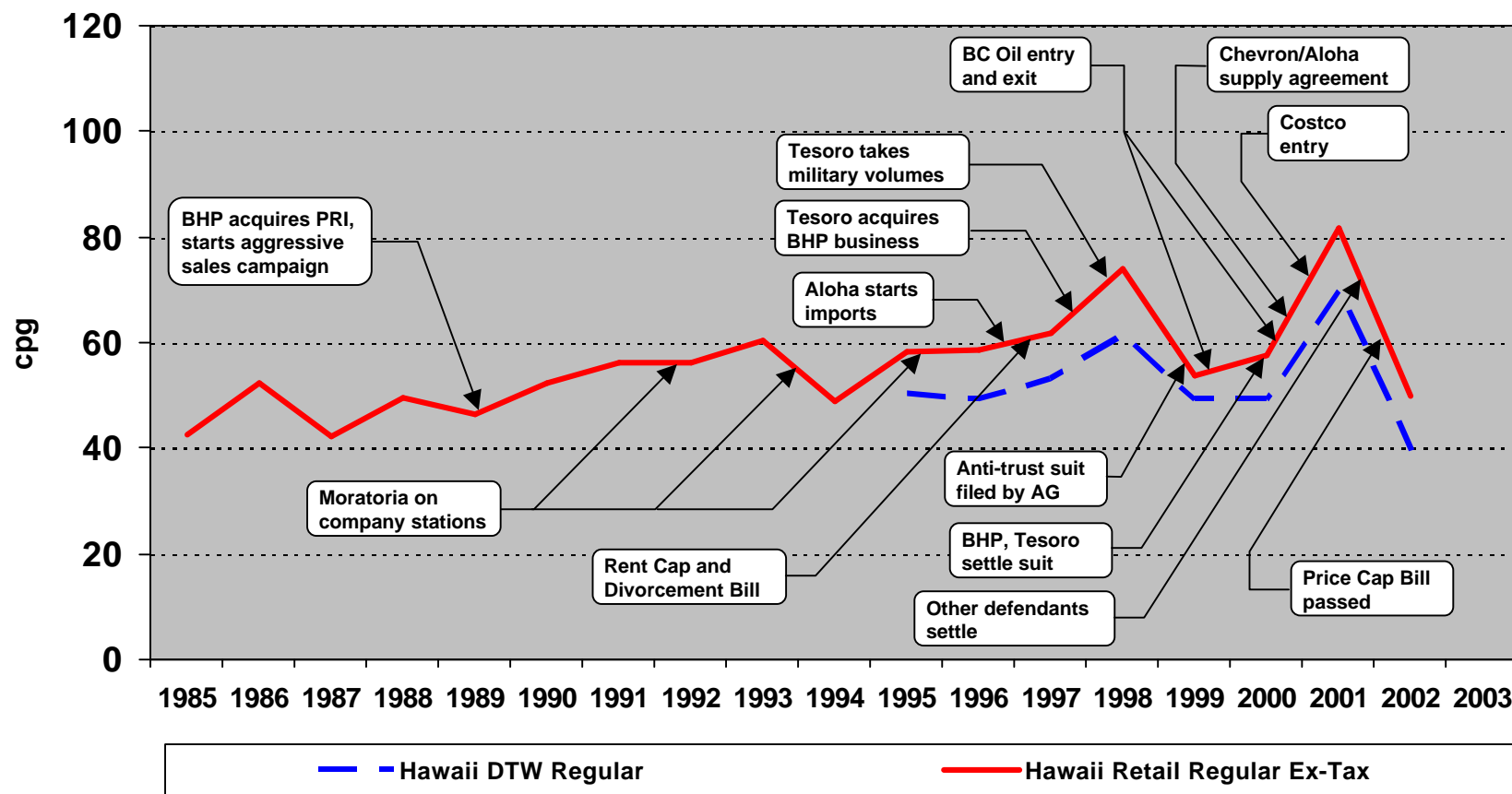
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# Hawaii Gasoline Timeline – Regular minus Crude



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# Lessons from Timeline



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- Hawaii's retail gasoline market not very sensitive to external factors
- High prices attract new participants (BHP, Tesoro, BC Oil), but
  - If new entrant has to buy its way in, high capital cost will prevent a low cost supplier strategy
  - Small size of the total market means that a grassroots new entrant has dismal economies of scale
  - Only novel approaches can break deadlock, for example Costco: nationwide purchasing leverage, low overheads, shared resources
- Underlying trend 1985 – 2002
  - Gasoline price differential over crude increased at 1.5% per year in nominal dollars
  - In constant 1985 dollars, gasoline margins decreased by 1.4% per year



## Hawaii Wholesale Gasoline Market



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- Hawaii lacks a bulk spot market
- There is no liquidity in the wholesale gasoline market
  - At 25 TBD, the total size of the market is equal to a single pipeline “piece”, the standard unit of trade in other markets
  - There is only a limited number of participants
  - There is little diversity between participants (no brokers, traders, foreign producers, small independents)
- Wholesale Price Non-Transparent
  - No posted pricing
  - No screen trading
- No Unbranded Spot Market
- No Forward Market
- Weak Basis Relationship to Crude Oil

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## Hawaii Retail Gasoline Market



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- Hawaii's average sales per station are less than 100,000 gln/month, versus 150,000 in California
- Land values can be prohibitive, \$5 MM for a half acre, \$40 k monthly lease
- Traditional model in Hawaii is based on service bays, but convenience stores offer higher revenue per square foot
- Lessee dealers are being superseded by large scale owner operators of multiple stations on mainland
- High Volume Retailers such as Costco make for even more efficient sales channels
- Mom and Pop operators likely to survive only in remote locations

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  - Effect West Coast Reference
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## Caps Elsewhere



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- US Nationwide Petroleum Price Controls, 1971-1981
  - Widely recognized as a failure
  - Caused significant market distortions, shortages, gas lines
- Canadian Experience
  - Nova Scotia – until July 1991
  - Prince Edward Island – 1988 to present
  - Newfoundland and Labrador – since 2001
  - Quebec (minimum price)
- Other countries had varying levels of price controls in the 1970s. Only Canada remains.

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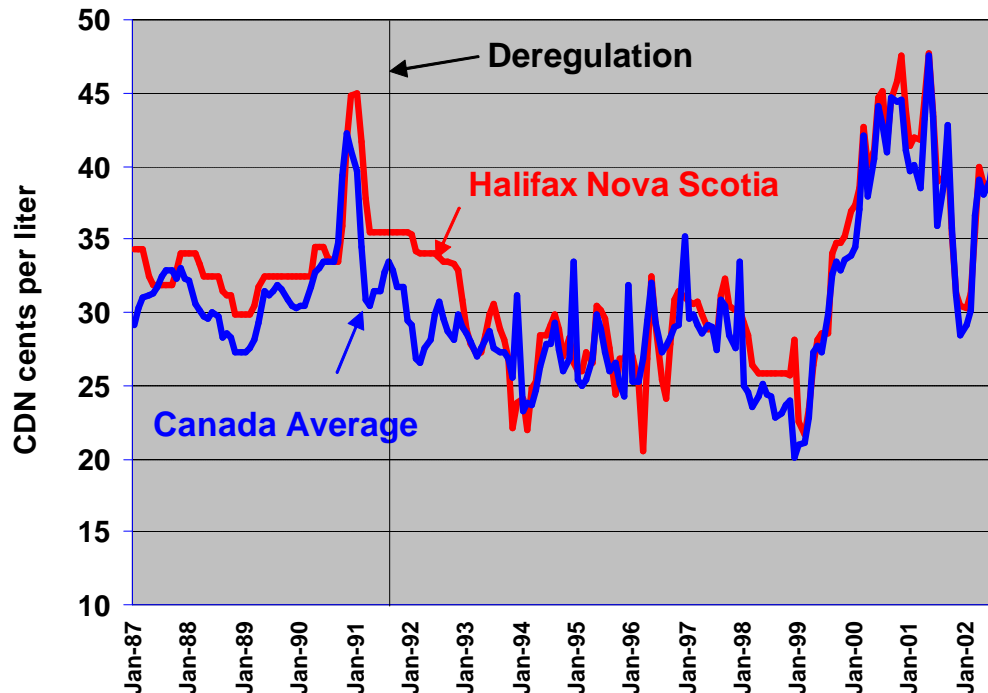
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# Nova Scotia Experience



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**Halifax/Nova Scotia Gasoline Prices\***  
1987 - 2002



\* Source of data: Erwin Reports

- Oldest of the Canadian price regulation initiatives
- Deregulated in July 1991
- Was above Canada average during regulation period
- Stayed above Canada average for one year after deregulation
- In line with Canada average after market forces had time to react

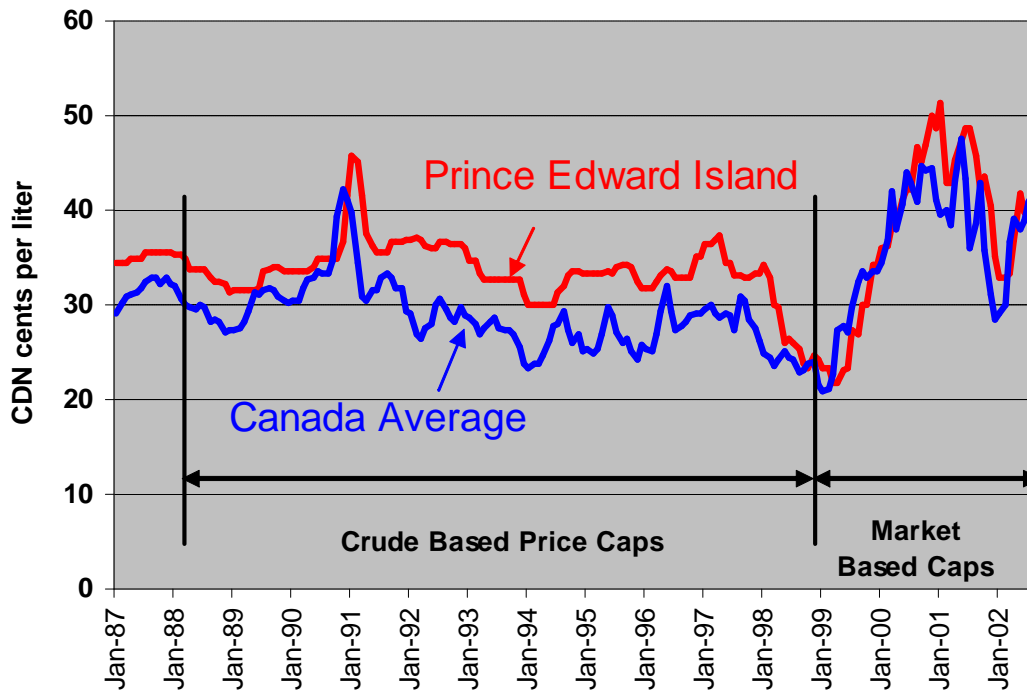


# Prince Edward Island Caps



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**Prince Edward Island Gasoline Prices\***  
1987 - 2002



\* Source of data: Erwin Reports

- Program initiated in 1988, still in effect today
- Max and min price set each month for all 6 local brands
- Initially crude based, now market based
- Built up from
  - Change in gasoline in NY harbor
  - Exchange rates
  - Mark-ups for transportation, margins, etc.
- Introduction of market based caps has lowered prices relative to Canada average

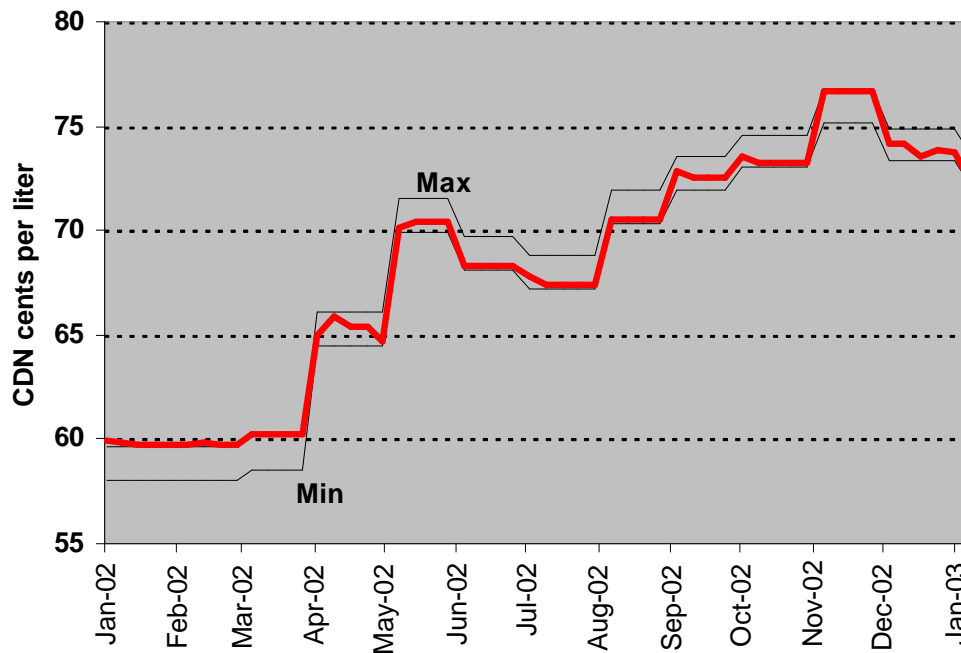


# Prince Edward Island Caps



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**Prince Edward Island Gasoline Prices\***



\* Source of data: Erwin Reports

- Actual pump prices bounce between narrow band of min and max range
- Max and Min prices are frequently binding
- In the absence of the minimum price, actual pump prices might have been lower for more than 50% of the time (since at “Min” so often)
- Complex and resource intensive system to administer and control

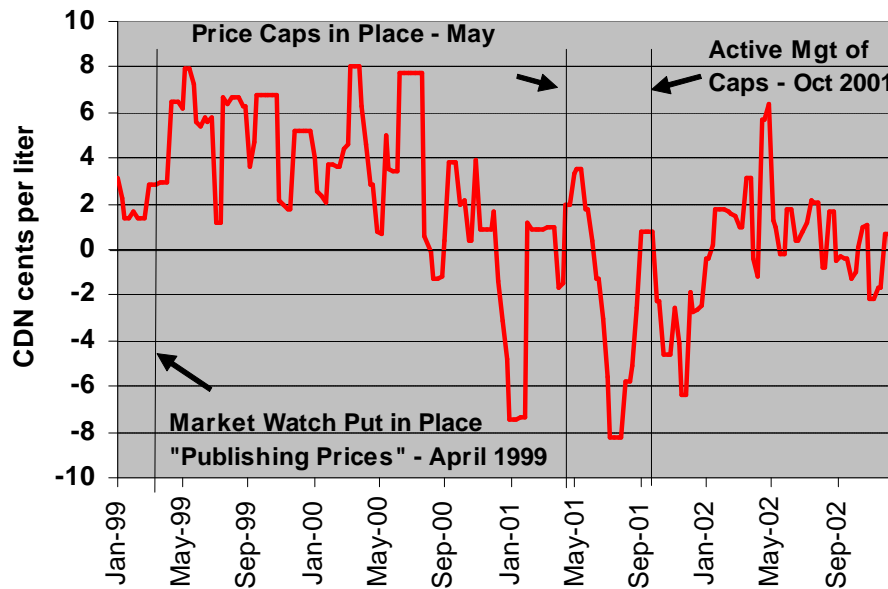


# Newfoundland and Labrador Caps



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## Newfoundland vs. Neighbor Provinces Gasoline Prices \*



- Premium Newfoundland pays over neighboring provinces has decreased slightly since price controls initiated
- Prices have decreased relative to Prince Edward Island
- No significant change in volatility

\* Source of data: Erwin Reports

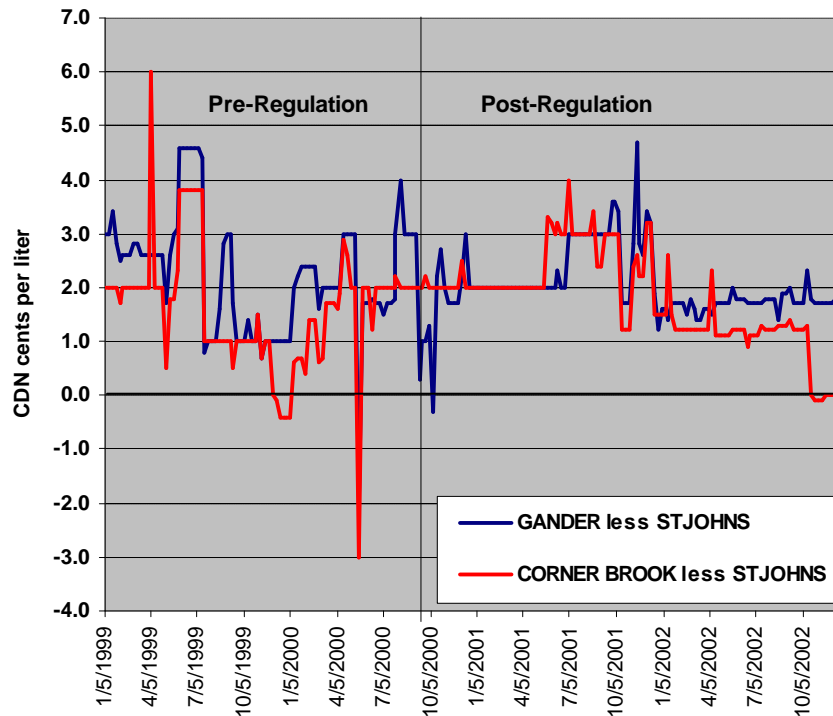


# Newfoundland and Labrador Caps



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## Newfoundland & Labrador Location Differentials\*



\* Source of data: Erwin Reports

- Location differentials have only come down slightly since introduction of price caps.
- Requires continual evaluation of location differentials e.g. differentials in Corner Brook reduced upon completion of marine infrastructure study



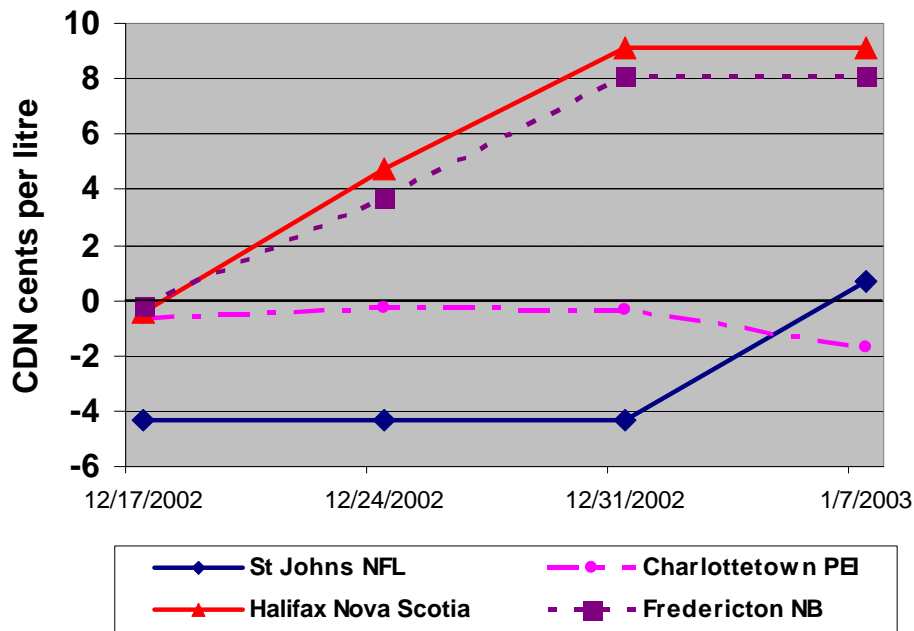


# Newfoundland and Labrador Caps



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**Cumulative Price Changes, Four Atlantic Cities\***  
December 2002 - Current



- Recently, prices in neighboring unregulated markets have moved up in response to oil price rises (also happened in early 2002)
- Regulated prices did not respond fast enough
- Shortages were reported, particularly in outlying areas
- Events resulted in calls for potential review or repeal of legislation

\* Source of data: Erwin Reports



## Experience with Caps



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- Causes significant market distortions
- Prices often above unregulated prices
- Complex system to administer and control
- Increases price volatility
- Calculation of location differentials cumbersome and controversial
- Produces shortages at various times
- Lags market conditions

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## Hawaii Cap Law (Act 77)



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- Establishes maximum wholesale and retail prices beginning July 1, 2004
- Applies to self-serve regular only
- Initial adjustment factors set, subject to annual review
- Formula for pre-tax wholesale price
  - Oahu baseline:
    - Ave (simple average) OPIS Daily spots (5-days in prior week) for LA, SF, and PNW + 4 cpg location adjustment + 18 cpg marketing margin factor
  - Neighbor Islands (NI) baseline:
    - Oahu baseline + 4 cpg NI location adjustment + 4 cpg NI marketing margin factor
- Formula for pre-tax retail price
  - Island pre-tax wholesale baseline + 16 cpg retail marketing margin
- Pump price
  - Pre-tax retail price plus applicable taxes (Gross Excise Taxes, Federal and State Excise, Island fuel taxes.)
    - G.E.T. 4.5% (4% at the consumer, 0.5% at wholesale)
    - Federal excise 18.4 cpg
    - State excise 16 cpg
    - Fuel taxes (Oahu 16.5, Maui 13, Kauai 13, Hawaii 8.8 cpg)
    - Environmental response tax 0.119 cpg

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## Hawaii Cap Law

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### ➤ Potential problems

- The caps may impart more volatility into gasoline prices than currently.
- The caps only cover regular self serve gasoline.
- The caps may encourage dealers to lower their prices slowly when caps are not “binding” in order to capture some of the loss they experienced when the price caps were binding.
- The linkage to California spot prices could impart large price swings as a result of California refinery disruptions.
- The caps will impart California’s seasonal price pattern to the non-seasonal Hawaiian prices.
- Potential shortages when price caps are “binding” (when unregulated prices above Caps)

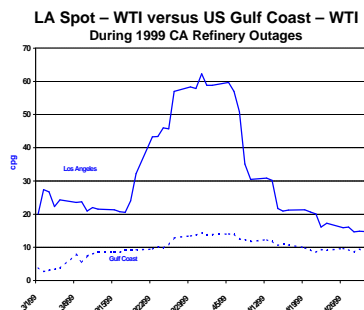
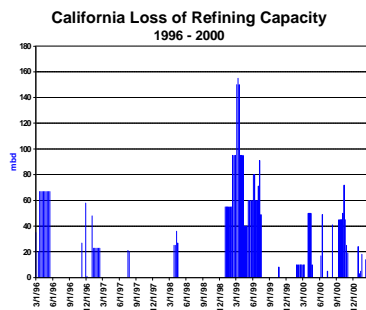
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**Linkage to California spot prices could impart large price swings as a result of California refinery disruptions.**

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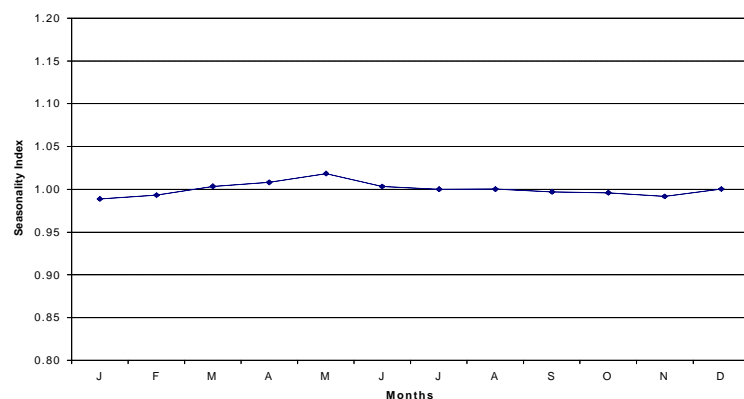
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# Hawaii Cap Law

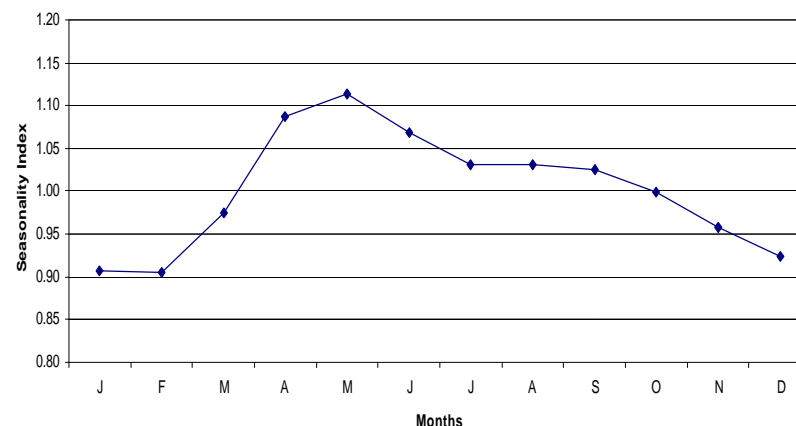


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**Seasonal Adjustment Factors (Base =1.0)  
5 Year Average Monthly Prices Hawaii**



**Seasonal Adjustment Factors (Base =1.0)  
5 Year Average Monthly Prices California**



**The caps will impart California's seasonal price pattern to the non-seasonal Hawaiian prices.**

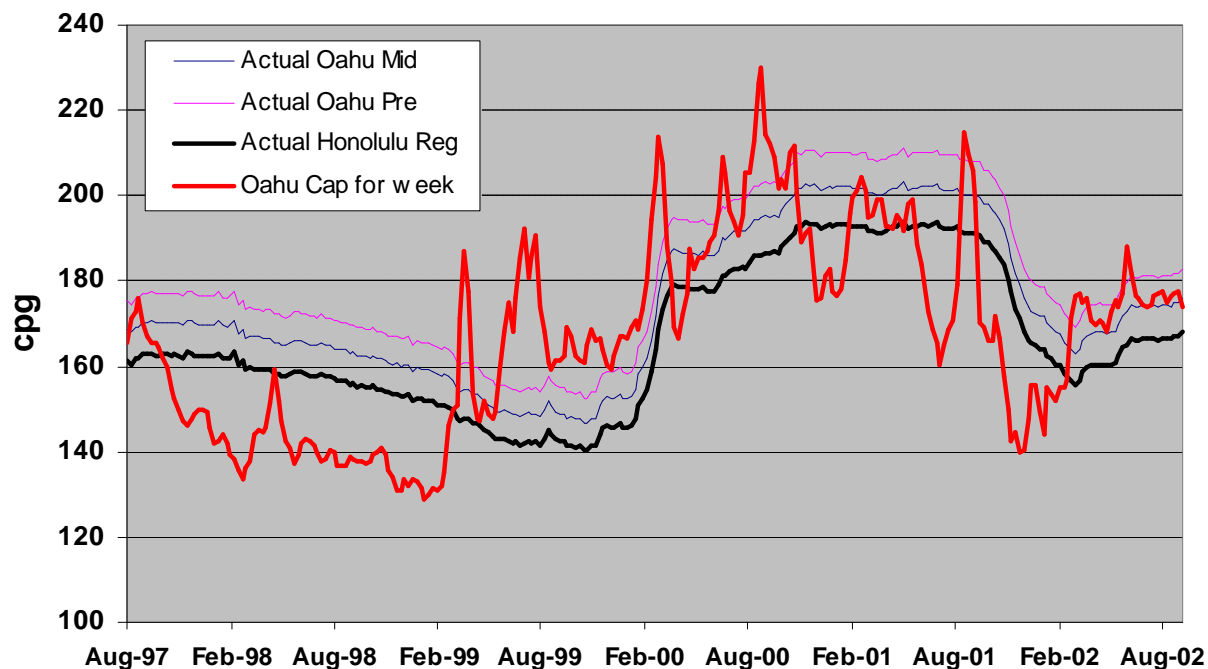


# Hawaii Cap Law



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## Oahu Retail Gasoline Prices – Actual versus Cap



**Actual Oahu Regular Prices exceeded the price cap 47% of time**

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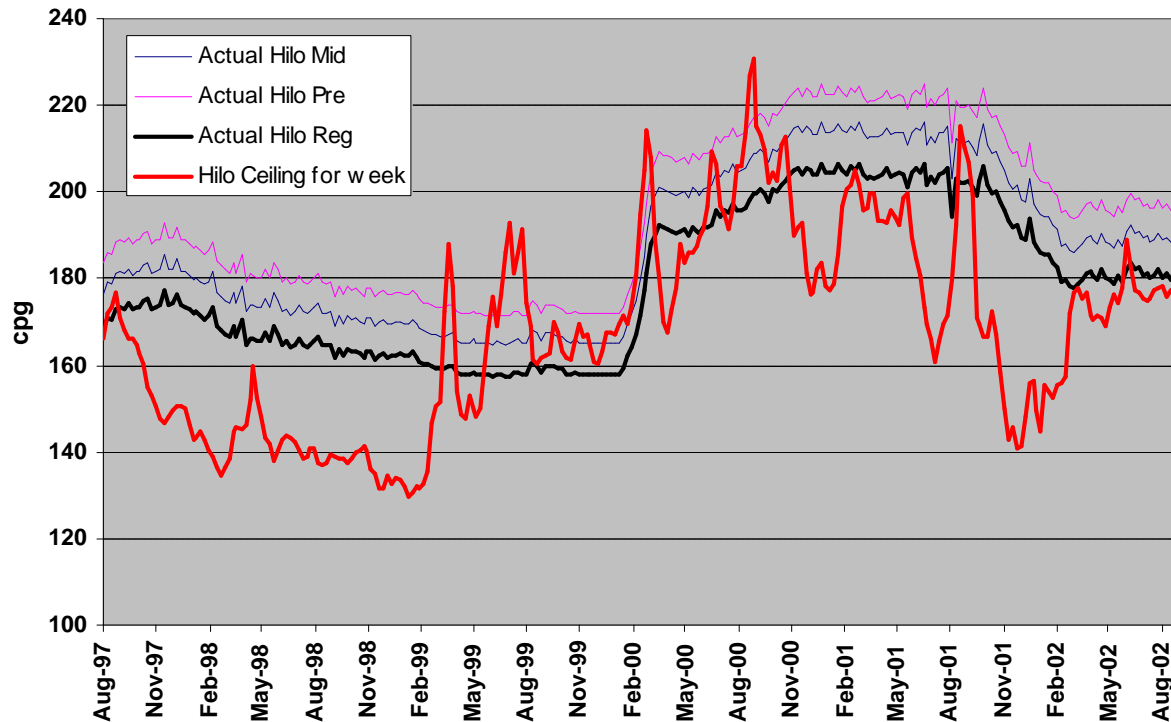


# Hawaii Cap Law



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## Hilo Retail Gasoline Prices – Actual versus Cap



**Actual Hilo Regular Prices exceeded the price cap 74% of time**

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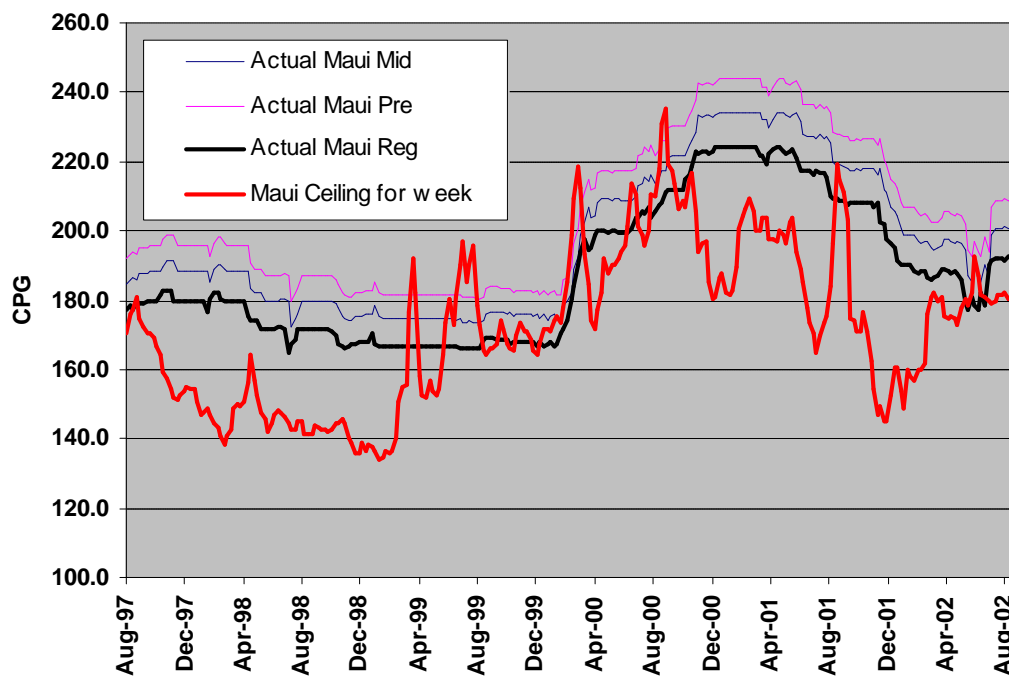


# Hawaii Cap Law



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## Maui Retail Gasoline Prices – Actual versus Cap



**Actual Maui Regular Prices exceeded the price cap 79% of time**

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## Hawaii Cap Law

Reduction in Consumer Costs of Gasoline  
Regular Prices at Lesser of Actual versus Cap  
Other Grades at Actual Historical Differential  
(Assumes no grade volume change)

Island	Reductions to Consumer Caps + Actual Lows		Reductions to Consumer Caps + Recovery	
	\$ MM/year	%	\$ MM/year	%
Oahu	16.5	3.7	(1.5)	(0.3)
Hawaii	7.2	6.4	4.6	4.1
Maui	7.9	8.9	3.7	4.1
Other	1.0	3.8	0.2	0.8
State	32.6	4.9	7.0	1.1

Note: Average annual calculated State gasoline bill is \$671 Million

## Agenda

- Preliminary Conclusions
- Scope & Status
- Stakeholder Meetings
- Supply/Demand Issues
- Hawaii Fuels Infrastructure
- Costs & Margins
- Market Mechanisms
- Impact of Price Caps
- Next Steps
  - Stakeholder Input
  - Quantitative Analysis
  - Formulate Solutions



## Stakeholder Input



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- Finalize Stakeholder meetings
  - Phillips, utilities, Maui, Kauai, others
  - To be completed this week
  - Submit final report by mid February
- Verify specific assumptions and numbers
  - Refiner costs
  - Historical volumes & prices
  - Retail costs
- Obtain feedback from selected stakeholders (staff, legislators, key industry participants) while developing recommendations

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## Quantitative Analysis



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- Confirm first round analysis
  - Refiner margins by product
  - Wholesale and retail cost structure
  - Impact of import parity pricing on economic viability of local refineries
- Assess societal cost and benefits of recommendations
  - Price caps
  - Oversight and management
  - All import strategy
  - Integrated energy strategy

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## Formulate Recommendations



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- At this stage, the effort is still to broaden perspective rather than narrow down towards particular recommendations; alternatives still include:
  - Create market transparency
  - State owned terminal, gasoline at import parity
  - Spread refining cost over other fuels to even out market disparities
  - Creation of an integrated energy strategy, including such options as ethanol, LNG, hydrogen, and export capable refineries
- Scenario approach needed to test effectiveness of alternatives
- Likelihood of finding solutions that do not involve some trade-off between various interests is low

